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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,801	12/01/2003	Joseph E. Schmalz	063718.0330	5545
23640	7590	08/28/2007	EXAMINER	
BAKER BOTTS, LLP			FRINK, JOHN MOORE	
910 LOUISIANA			ART UNIT	PAPER NUMBER
HOUSTON, TX 77002-4995			2142	
			NOTIFICATION DATE	DELIVERY MODE
			08/28/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

[debbie.allen@bakerbotts.com](mailto:debbie.allen@bakerbotts.com)

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/724,801	SCHMALZ ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	John M. Frink	2142

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-68 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-68 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 01 December 2003 is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                        |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/01/2003</u> . | 6) <input type="checkbox"/> Other: _____.  |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to because Figs. 1, 2A and 2B are inadequately labeled. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The disclosure is objected to because of the following informalities: The 'Brief Descriptions of the Drawings' are overly generic.  
  
Appropriate correction is required.

***Claims Objections***

3. Claims 6 is objected to because of the following informalities: recorded first and second times are referenced in claim, 6, but also in claims 1. Thus is unclear which said first and second recorded time are utilized in claims 6; those recorded in claims 1, or those recorded in claims 6. Appropriate correction is required.
4. Claims 13, 17, 36, 40, 48 and 62 are objected to because of the following informalities: a fourth message is referenced, but there is no mention of a third message. For the purposes of this examination, it is assumed that the applicant intended to reference a third message in place of the referenced fourth message. Appropriate correction is required.

***Claims Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 4, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16, 20, 21, 23, 25, 28, 30, 31, 32, 33, 35, 36, 37, 38, 39, 43, 44, 46, 47, 50, 52, 53, 54, 55, 57, 58, 59, 60, 61, 65, 66 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schuster et al. (US 6,360,271 B1), hereafter Schuster, in view of Mills (Internet Time Synchronization: The Network Time Protocol).

7. Regarding claims 1 and 47, Schuster shows a method of and a system for adjusting time recordation, comprising:

sending a first message to a first processor that maintains a first time (Fig. 2, col. 9 lines 40 – 44);

sending a second message to a second processor that maintains a second time (Fig. 2, col. 10 lines 48 – 54 and col. 11 lines 3 – 8);

recording the first time when the first processor receives the first message (Abstract, lines 2 – 4);

recording the second time when the second processor receives the second message (Abstract, lines 2 – 4);

sending a third message from the first processor to the second processor (col. 12 lines 43 – 48);

sending a fourth message from the second processor to the first processor including information indicative of the recorded second time (col. 12 lines 48 – 64).

Schuster does not show setting the first time of the first processor based at least in part on the sum of the recorded second time and a roundtrip time for the third and fourth messages.

Mills shows setting the first time of the first processor based at least in part on the sum of the recorded second time and a roundtrip time for the third and fourth messages (Fig. 3 and page 5, Section 3.1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Schuster with that of Mills in order to utilize the offset information determined by Schuster to set the clocks to the same time, resulting

in clocks that are fully synchronized without having to utilize said offset for each comparison.

8. Regarding claim 25, Schuster in view of Mills further show a computer program, stored on a tangible storage medium, for adjusting time recordation, the program including executable instructions that cause one or more computers to:

send a first message to a first processor that maintains a first time (Schuster, Fig. 2, col. 9 lines 40 – 44);

send a second message to a second processor that maintains a second time (Schuster, Fig. 2, col. 10 lines 48 – 54, col. 11 lines 3 – 8);

record the first time when the first processor receives the first message (Schuster, Abstract lines 2 – 4);

record the second time when the second processor receives the second message (Schuster, Abstract lines 2 – 4);

send a third message from the first processor to the second processor (Schuster, col. 12 lines 43 – 48);

send a fourth message from the second processor to the first processor including information indicative of the recorded second time (Schuster, col. 12 lines 48 – 64); and

set the first time of the first processor based at least in part on the sum of the recorded second time and the roundtrip time for the third and fourth messages (Fig. 3 and page 5, Section 3.1).

9. Regarding claim 13, 36 and 58, Schuster in view of Mills further show a method of, a computer program, stored on a tangible storage medium for, and a system for adjusting time recordation, comprising:

    sending a first message to a first processor that maintains a first time (Schuster , Fig. 2, col. 9 lines 40 – 44);

    sending a second message to a second processor that maintains a second time (Schuster, Fig. 2, col. 10 lines 48 – 54, col. 11 lines 3 - 8);

    recording the first time when the first processor receives the first message (Schuster, Abstract lines 2 – 4);

    recording the second time when the second processor receives the second message (Schuster, Abstract lines 2 – 4);

    sending a third message from the second processor to the first processor including data based at least in part on the recorded second time (Schuster, col. 5 lines 25 – 38, col. 7 lines 32 – 45); and

    adjusting the first time based on a correction that is based at least in part on the data and the recorded first time (Mills, Fig. 3 and page 5, Section 3.1).

10. Regarding claims 4, 16, 28, 39, 50 and 61, Schuster in view of Mills do not show where sending a first message to a first processor that maintains a first time and sending a second message to a second processor that maintains a second time are separated by a predictable amount of time.

Logical reasoning dictates that the first and second messages would be separated by a predictable amount of time, specifically within the range of the 0

seconds (instantly) to the time which the system implementing the invention ceases to function.

The combination of Schuster in view of Mills thus teaches where sending a first message to a first processor that maintains a first time and sending a second message to a second processor that maintains a second time are separated by a predictable amount of time.

11. Regarding claims 6, 30 and 52, Schuster in view of Mills further show sending a fifth message to the first processor (Schuster , Fig. 2, col. 9 lines 40 – 44);

sending a sixth message to the second processor (Schuster, Fig. 2, col. 10 lines 48 – 54, col. 11 lines 3 - 8);

recording the first time when the first processor receives the fifth message (Schuster, Abstract lines 2 – 4);

recording the second time when the second processor receives the sixth message (Schuster, Abstract lines 2 – 4);

sending a seventh message from the first processor to the second processor including information indicative of the recorded first time (Schuster, col. 5 lines 25 – 38, col. 7 lines 32 – 45) and

sending an eighth message from the second processor to the first processor including a correction based at least in part at least in part on the recorded first and second times (Mills, Fig. 3 and page 5, Section 3.1) as said steps are essentially a repetition of the method/system synchronizations steps of claims 1, 47 and 25, where

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Mills specifies repeating synchronizing steps in Section 3.5 paragraph 2 and 3.6 paragraph 5 to maintain/improve clock synchronization and accuracy.

12. Regarding claims 7, 31 and 53 Schuster in view of Mills further show sending a fifth message to the first processor (Schuster , Fig. 2, col. 9 lines 40 – 44);

sending a sixth message to the second processor (Schuster, Fig. 2, col. 10 lines 48 – 54, col. 11 lines 3 - 8);

recording the first time when the first processor receives the fifth message (Schuster, Abstract lines 2 – 4);

recording the second time when the second processor receives the sixth message (Schuster, Abstract lines 2 – 4);

sending a seventh message from the first processor to the second processor including information indicative of the recorded first time (Schuster, col. 5 lines 25 – 38, col. 7 lines 32 – 45);

sending an eighth message from the second processor to the first processor including information indicative of the recorded second time ((Mills, Fig. 3 and page 5, Section 3.1) as said steps are essentially a repetition of the method/system synchronizations steps of claims 1, 47 and 25, where Mills specifies repeating synchronizing steps in Section 3.5 paragraph 2 and 3.6 paragraph 5 to maintain/improve clock synchronization and accuracy); and

calculating a correction based at least in part at least in part on the recorded first and second times (Schuster, col. 13 lines 5 – 22).

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13. Regarding claims 8, 20, 32, 43, 54 and 65 Schuster in view of Mills further show applying the correction to the first time a plurality of times at a regular interval (Mills, Section 3.5 paragraph 2 and 3.6 paragraph 5).

14. Regarding claims 9, 21, 33, 44, 55, and 66, Schuster in view of Mills further show where the first processor is located remotely from the second processor (Schuster, Fig. 2).

15. Regarding claims 11, 23, 35, 46, 57, and 68, Schuster in view of Mills further show where the first processor is coupled by a network to a plurality of tools that send time-based measurements to the second processor (Schuster, Figs. 1 and 2, col. 6 line 40 – col. 7 line 2).

16. Regarding claim 12, Schuster in view of Mills further show where the roundtrip time for the third and fourth messages is an amount of time from the sending of the third message to the receipt of the fourth message (Mills, Fig. 3 and page 5 Section 3.1).

17. Regarding claims 14, 37 and 59, Schuster in view of Mills further show where the data is the recorded second time (Schuster, col. 12 lines 48 – 64).

18. Regarding claims 15, 38 and 60, Schuster in view of Mills further show where the data is equal to the correction (Schuster, col. 13 lines 20 – 35).

19. Claims 2, 3, 18, 19, 26, 27, 41, 42, 48, 49, 63 and 64 rejected under 35 U.S.C. 103(a) as being unpatentable over Schuster in view of Mills as applied to claims 1, 13, 25, 36, 47, and 58 above, and further in view of Topfl et al. (US 2004/0128350 A1), hereafter Topfl.

20. Regarding claims 2, 18, 26, 41, 48 and 63, Schuster in view of Mills show claims 1, 13, 25, 36, 47, and 58, including where the first and second processors are coupled (Schuster, Fig. 2).

Schuster in view of Mills do not show where they are coupled by an asymmetric communication medium.

Topfl shows where computers and the processors inherently within those computers can be coupled by an asymmetric communication medium ([0030]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Schuster in view of Mills with that of Topfl in order to support and utilize a common method for computer communication.

21. Regarding claims 3, 19, 27, 42, 49 and 64, Schuster in view of Mills and Topfl further show where the first processor and second processor are coupled by an asymmetric digital subscriber line (Schuster, Fig. 2; Topfl, [0030]).

22. Claims 5, 17, 29, 40, 51 and 62 rejected under 35 U.S.C. 103(a) as being unpatentable over Schuster in view of Mills as applied to claims 1, 13, 25, 36, 47, and 58 above, and further in view of Krause et al. (US 7,171,484 B1), hereafter Krause.

23. Regarding claims 5, 17, 29, 51 and 62, Schuster in view of Mills show claims 1, 13, 25, 36, 47, and 58.

Schuster in view of Mills do not show where the third message includes an identification of the first message and further comprising: upon receipt of the third message, matching the identification of the first message with an identification of the second message.

Krause shows utilizing identifiers in messages and comparing the message identifiers, matching them to ensure they are sequential, to maintain system integrity and to ensure messages are delivered or combined in the correct order, and as a method of message error checking (col. 8 lines 51 – 64, col. 22 lines 34 – 37, col. 24 lines 38 – 45).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Schuster in view of Mills with that of Krause in order to utilize error and integrity checking for the transmitted messages, improving system reliability.

The combination of Schuster in view of Mills and Krause thus teaches where the third message includes an identification of the first message and further comprising: upon receipt of the third message, matching the identification of the first message with an identification of the second message.

24. Regarding claim 40, Schuster in view of Mills and Krause teaches where the third message includes an identification of the second message and further including executable instructions that cause one or more computers to: upon receipt of the third message, match an identification of the first message with the identification of the second message (Krause, (col. 8 lines 51 – 64, col. 22 lines 34 – 37, col. 24 lines 38 – 45)).

25. Claims 10, 22, 34, 45, 56, and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schuster in view of Mills as applied to claims 1, 13, 25, 36, 47, and 58 above, and further in view of Shah et al. (US 6,400,646 B1), hereafter Shah.

26. Regarding claims 10, 22, 34, 45, 56, and 67, Schuster in view of Mills show claims 1, 13, 25, 36, 47, and 58.

Schuster in view of Mills do not show where the first processor is located in a wellbore and the second processor is located at the surface.

Shah shows where the first processor is located in a wellbore and the second processor is located at the surface (Abstract).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Schuster in view of Mills with that of Shah in order to provide for time synchronization in an environment where synchronization is very important (Shah, Abstract).

27. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schuster in view of Mills as applied to claim 13 above, and further in view of Cognet et al. (US 7,080,160 B2), hereafter Cognet.

Schuster in view of Mills show claim 13.

Schuster in view of Mills do not show where adjusting the first time includes moving the first time forward or backward by an amount and, after a predetermined time, moving it forward or backward by the same amount again.

Cognet shows amortizing time adjustments over an interval (col. 2 lines 17 – 37), thus teaching where adjusting the first time includes moving the first time forward or backward by an amount and, after a predetermined time, moving it forward or backward by the same amount again.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Schuster in view of Mills with that of Cognet in order avoid having to perform all time adjustments instantly, thus spreading out any changes that could result from clock changes over a longer period of time, resulting in a smoother, less sudden adjustment.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John M. Frink whose telephone number is (571) 272-9686. The examiner can normally be reached on M-F 7:30AM - 5:00PM EST; off alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on (571)272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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